EXAMINING THE EFFECTS OF PHYSICAL EXERCISE ON WORK EFFICIENCIES OF STUDENTS AT VETERINARY COLLEGE

RESEACH PROPOSAL SUBMITTED TO

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,

NANDED

FOR THE AWARD OF DEGREE OF

DOCTOR OF PHILOSOPHY

IN THE FACULTY OF PHYSICAL EDUCATION

BY

RAMAKANT D. BANSODE

RESEARCH SUPERVISOR

DR. CHANDRAKANT KARAD

COLLEGE OF PHYSICAL EDUCATION

UDGIR

SCHOOL OF EDUCATIONAL SCIENCES,

SWAMI RAMANAND TEERTH MARATHWADA UNIVERSITY,

NANDED.

YEAR - 2019

CHAPTER I

INRTODUCTION

Introduction

The engaging in regular Exercise is particularly apparent in the prevention of several chronic diseases, including: obesity, depression, cardiovascular disease, diabetes, cancer, Blood pressure, and osteoporosis. The several studies shows that young people can benefit from Exercise and health related physical fitness as it contributes to developing healthy bones, sound cardiovascular efficiency and, lung function as well as improved motor skills and cognitive function. Exercise and health related physical fitness may help to prevent fractures of different body segments among adults and reduce the risk of osteoporosis. Physically active can enhance functional capacity among young people, and can help to maintain the quality of life and independence.

A number of studies have shown that exercise may play a therapeutic role in addressing a number of psychological disorders. Studies also show that exercise has a positive influence to reduce depression, anxiety, stress. Physical self-worth and physical self-perception, including body image, has been linked to improved self-esteem. The evidence relating to health benefits of physical activity predominantly focuses on intra-personal factors such as, psychological, physical, physiological, cognitive and affective benefits. Exercise which can also produce positive health effects in individuals and communities. Exercise and health related physical fitness have long been used in the, Rehabilitation cure and treatment of communicable and non-communicable diseases. Exercise and health related physical fitness for individuals is a strong means for the prevention of diseases and for nations is a cost-effective means to improve public health across populations.

Exercise and health related physical fitness have a vital role in the life of human being from time immemorial. The development of the Societies, communities depends in the hands of the people, who are healthy and physically fit. Every individual should develop their fitness for a happiness and effective living. In order to get physical fitness one has to involve in Exercise and health related physical fitness programme.Exercise and health related physical fitness programme are essential for the enhancing of wholesome personality of an individual’s which would depend

upon the opportunities provided for universal development of the, physiological, psychological, physical, social and spiritual aspects. Hence a well-organized and properly administered Exercise and health related physical fitness programme for adults is very essential. Exercise and health related physical fitness programme throughout the ages has been acclaimed for health and recreation. It provided fun and enjoyment. It also provided youthful exuberance and the elderly care. Exercise and health related physical fitness and movements are as old as human existence. It played numerous roles from struggle for existence to struggle for excellence.

Over a decade, the society in general has realized the need for keeping fit and health through organized physical activity programme. Scientific evidence has made with a clear and that unless man engages himself in organized vigorous physical activity programme. Many researchers strongly support the regular exercises helps one to keep a strong and healthy and to prevent cardio vascular diseases. Physically fit person, heart beats at a lower rate and pumps more blood per beat at rest. As a result of regular exercises and individual's capacity to use oxygen is increased systematically energy production depends on internal chemical or metabolic change. Therapeutic exercise is generally used for rehabilitation of injury or treatment of some type of chronic disease. Therapeutic exercise is one of the most valuable modalities used in physical rehabilitation. Some of the primary objectives of therapeutic exercise are to improve active pain-free range of motion, muscle mass & muscle strength, balance, performance with daily function, aerobic capacity, help prevent further injury to reduce weight, and lameness. Common activities include standing exercises, controlled leash activities, stair climbing, treadmill activity, "wheel barrowing" (for forelimb activity), and "dancing" (for rear limb activity). Other activities include jogging, sit-to-standexercises, pulling or carrying weights, walking and trotting across cabalettas rails, playing ball, taping a bottle or syringe captors the bottom of an unaffected foot to encourage weight bearing, slinging the contra lateral good limb, and using balance balls or rolls. In addition to being an important method to assist an animal's return to the best function possible, the equipment needed for therapeutic exercise is relatively inexpensive and similar principles apply to a variety of individuals and conditions. Meanwhile, the importance of Health–related physical Programmes is linked to a higher quality of life as well as academic achievement. It is well documented that Health related physical fitness in childhood and adolescence improve strength endurance, health build, healthy bones muscles, hips weights, reduce anxiety, stress and increases self-esteem and may improve cardio reparatory function.

Low Health-related physical fitness may result in high physical strain during the performance of activities (Bruining et. al. 2007). As a consequence, activity levels may decrease due to fatigue and discomfort, exacerbating low physical fitness. The definition of health related fitness is fitness done with balance among the development and improvement of the whole body. The exercises are much better when you include another exercise that will focus on improving your strength, muscle development and endurance. It will make you less prone to injuries. When strength training and cardiovascular fitness plans are combined, one will also look and feel younger. This will lead to improved self-esteem. Also, the level of stress and depression will decrease. If you are wondering about the types of activities that will work best for you, visit a professional and consult with him or her. If you have certain health conditions, it is best if you consult with your doctor first. Aside from cardio and body composition, strength and muscular endurance, flexibility is another important thing that you need to consider. Data on the physical fitness children from Denmark (Knuttgen, 1961), England (Campbell&Pohndof, 1961), South Africa (Sloan, 1966), Belgium (Hebbelinck&Borms 1969), Israel (Ruskin, 1978), & Japan (Ishiko, 1978) are available in the literature. All these reports made the health planners realize the importance of the health related and physical fitness in the development of total fitness. Health-related Physical fitness is a required element for all the activities in our society. Health related physical fitness of an individual is mainly dependent on lifestyle related factors such as daily physical activity levels. Physical fitness is also considered as the degree of ability to execute a physical task under various ambient conditions. (Hulenset.al. 2002).Healthy body is necessary for increasing the working capacity and maintaining physical fitness of any individual to perform his daily tasks vigorously and alertly, with left over energy to enjoy leisure time activities. It also helps to withstand stress and carry on, in circumstances where a physically unfit person could not continue (Patil et.al.2012).The importance of cardiovascular fitness to health for all individuals has been well documented. Physical fitness is a required element for all the activities in our life. Health related fitness of an individual is mainly dependent on lifestyle related factors such as daily physical activity levels. It will be believed that the low fitness level of an individual is associated with higher mortality rate. (Jourkhesh et.al.2012).Health-related fitness, the activity components included are not only for muscular development and endurance training. The lungs, heart, and circulatory system are also the focal points in health and fitness. The reason for this is to improve stamina, immune system, and maintain good body composition. Health related fitness

reduces the risk of cardiovascular diseases and other diseases like hypertension, Diabetes obesity, and may cure respiratory problems like asthma (Amusa, &Goon, 2011).Good Physiological Efficiency recognized as an important component of health and it may be important for the performance of functional activities and quality of life (Maria et. al., 2003),Low Physiological Efficiency may result in high physical strain during the study period(Pongprapai, et. al. 1994). The physiological effects of health related physical fitness programme are wide ranging, and affect various body systems. As a modifiable component of energy expenditure, physical activity can affect energy balance. However, the total effects of health related physical fitness programme on total energy expenditure go beyond the health related physical fitness programme induced energy expenditure. Increases in resting metabolic rate and non-exercise activity thermo genesis are also seen.

STATEMENT OF THE PROBLEM

"Examining the effects of physical exercise on work efficiencies of students at Veterinary College"

OBJECTIVES OF THE STUDY

The Objective of the study is to determine the Impact of physical exercise on work Efficiencies of students of veterinary college"

HYPOTHESIS

The following hypotheses formulated for the present study.

There would be significant difference of the physical exercise on work Efficiencies of students of veterinary college"

DELIMITATIONS OF THE STUDY

1. The study will be delimited to the young adults of aged between 18 to 28 years.
2. The study will be delimited to only young adults.
3. The geographical area will be delimited to the jurisdiction of Veterinary college udgir .

4. The period of training programme will be delimited to 12 weeks and 4 days per week.
5. The study would be delimited to following physiological efficiency.

A) Blood Pressure:-

a) Systolic Blood Pressure
b) Diastolic Blood Pressure

B) Physiological efficiencies:-

a) Resting heart rate
b) Respiratory rate.
c) Breath holding capacity (Inspiration).
d) Breath holding capacity (Expiration).

C) Physical fitness components

LIMITATIONS OF THE STUDY

There are a number of limitations restricting the generalize ability of this study are as

1) Since the trainees belong to different level of performance hence the prior Experience of the players may be considered as limitation of the study.
2) Since the trainer belonged to different training this may be also considered as Limitation of the problem.
3) There will be no control of research scholar on the diet of the subjects.
4) The effect of weather conditions will be considered as limitations.
5) No motivation techniques will be used during administrating the test.

DEFINITION & EXPLANATION OF TERMS

Physiological Efficiency:

Ability to Physiological work capacity of human body system.

Resting Heart Rate:

The heart rate is differenced as the frequency or number of heart in one minute.

Respiratory Rate:

It is deficient as the total number if breathe in one minute.

Breath Holding Capacity (Expiration):

The time for which one can hold air after full expiration is called breathing holding capacity after expiration.

Breathing Holding Capacity (Inspiration):

The time for which, one can hold air after inspiration.

Blood Pressure:

The blood pressure is the pressure of the blood within the arteries. It is produced primarily by the contraction of the heart muscle**.**

Body Mass Index:

Body Mass Index will be measured by individual's body mass divided by the square of his height.

Physical exercise:

The health related physical fitness programme will be designed by the investigator. The health related physical fitness programme includes exercise in aerobic nature.

CHAPTER II

REVIEW OF RELATED LITERATURE

The following review has been selected by the investigator.

Steven (1897) conducted a study to find out the effects in physical fitness components of the BMI, cardio respiratory Endurance, flexibility and dynamic strength, Subjects involved in the weight training and aerobic dance groups experienced significant positive changes in body composition, flexibility, and dynamic strength. The results show that positive changes in flexibility and dynamic strength. Finally it will be concluded that improvement in body compositions, flexibility and dynamic strength

Frank et.al.(1969) determined the effects of PFT on the BMI and dietary of the college females. Five members of the women's swimming team and 10 members of women's tennis team at the University of the California ware participated in the study. The result shown that modifications in BMI occur during physical training program, modification in energy expenditures due to the physical activities will be significantly effect by diets also.

David et.al (1979) conducted a study The Effect of Swimming Training on Muscular Performance and Body Composition in Children, A group of swimming team aged 9 to 11 years, 13 boys and girls will be tested as source of data. Data will be analyzed with mean, standard deviation mutilated analysis of covariance and result will be found as the primary training effect for young swimmers is an increase in muscular endurance rather than an increase in muscular strength or changes in body composition.

Dwyer et.al. (1983) conducted a study on 519 ten year old south Australian school children took part in The School Health Academic Performance and Exercise (SHAPE) study, which involved 45-60 minutes of additional physical education each day. The findings from the study indicated health benefits from daily physical activity. There will be no evidence of any loss of academic achievement, measured by arithmetic and reading tests, despite less time dedicated to classroom teaching.

Sudsuanget. al. (1991) studied on Serum cortical and total protein levels, blood pressure, heart rate, lung volume, and reaction time will be studied in 52 males 20-25 years of age practicing

Dammam kaya Buddhist meditation, and in 30 males of the same age group not practicing meditation. It will be found that after meditation, serum cortical levels will be significantly reduced, serum total protein level significantly increased, and systolic pressure, diastolic pressure and pulse rate significantly reduced. Vital capacity, tidal volume and maximal voluntary ventilation will be significantly lower after meditation than before. There will be also significant decreases in reaction time after meditation practice. The percentage decrease in reaction time during meditation will be 22%, while in subjects untrained in meditation; the percentage decrease will be only 7%. Results from these studies indicate that practicing Dhammakaya Buddhist meditation produces biochemical and physiological changes and reduces the reaction time.

Gabbard (1993) conducted the study on immediate, short term responses to physical activity will be monitored in 120 male and female, grade 6 school children. Participants walked for 20-40 minutes depending on the trial allocated, followed immediately by a 90 second math's computer test. This will be carried out 3 times a day for 3 weeks. Improved mathematical performance will be witnessed immediately following 20-40 minutes of afternoon walking, although no significant difference will be noticed when performing the same intervention in the morning. This suggests that physical exertion may help to sustain appropriate cognitive functioning in the afternoon.

Shephard and Lavallee (1994) conducted the study on primary school students in an experimental group will be subjected to an additional hour of physical education each day compared to a control group, who received a single period of 40 minutes non-specialist education. The additional physical education in the experimental group will be provided by a specialist educator, and as a consequence the experimental group received 14% less academic instruction than the control group. Academic performance will be provided as a mean of annual scores obtained in French, English, Maths, Science, and overall conduct. Results showed that girls gained a larger academic advantage than boys from the additional physical education provided in the experimental group. Children in the experimental group had significantly higher academic performance than controls in grades.

Pepin et.al. (1996) Conduced on the effects of isometric exercise on 30 males, 74 females, aged 23-61 year and control subjects 9 males, 16 females, aged 25-47 yr. Systolic, diastolic, and mean arterial pressure (MAP) increased linearly in both groups, but will be significantly lower (P

< 0.05) in patients with MS at 20%, 40%, 60%, 80%, and 100% of exercise duration. Mean change in MAP at fatigue will be +47.9 mm Hg for controls and +28.2 mm Hg for patients with MS, with 18 patients with MS between -6 mm Hg and +15 mm Hg. Heart rate increased normally in patients with MS.. In 17% of patients tested, attenuation will be profound. Data also suggest an abnormal dissociation between the heart rate and press or response to static work in patients with MS.

Shephard (1997) conducted study on total of 546 Canadian primary school children participated in a quasi-experimental study, where the impact of an additional hour each day of vigorous physical education, taught by a professional instructor will be investigated. The control groups will be from classes immediately above and below the experimental group, who received 40 minutes per week of physical education from their academic teacher. Despite the experimental group receiving 14% less academic instruction, their academic performance significantly increased relative to controls. In the initial months of the intervention, the experimental group experienced accelerated development of various psychomotor skills such as perception, though control students caught up later into the study.

Jarrett et.al. (1998) In this intervention study, a break-time period will be introduced once a week at an American primary school which will be normally opposed to such practice. A total of 44 boys and girls will be their own controls on non-break-time days, and will be assessed in classroom behavior areas of working, fidgeting and 17 listlessness. Over half (60%) of the participants (including those with attention deficit disorder) benefitted considerably, working more, fidgeting less, or both, on break-time days. The authors suggested that the break-time period serves a positive purpose in the primary school curriculum, contrary to the practice of minimizing recess in many schools across North America and the UK.

Walker ET. al. (1998) investigated the "Effect of Physical fitness training on strength BMI on surgery patients". The study design for 12 week Physical fitness training program effectively maintain strength LBM and BMR in twenty four women subjects will be selected randomly assigned to either an exercise (E) group and control (C) group. Both groups will be measured for weight % body fat (BF), fat mass (FM), LBM, bone mineral density (BMD), BMR, 1-RM bench press (BP) and 1- RM leg press (LP) the results indicated that exercise group significantly decrease in BF and increase in BP and LP over the Control group loss of LBM will

be evident in the control group, finally it will be concluded that the 12 weeks of structured Physical fitness exercise effects strength and LBM in post-bariatric surgery patients.

Morris (1998) conducted the study on health outcomes. A significant difference will be found in the spirituality scores between a control group and a research group that practiced daily meditation. The spirituality scores will be significantly correlated with coronary artery obstruction over 4-years duration. The lowest scores of spiritual well-being had the most progression of coronary obstruction and the highest scores had the most regression. The study concluded that spiritual well-being may be an important factor in the development of coronary artery disease.

Smolder et.al (1998) Examined related to isometric response on 10 young their aged between 23to 29 years and 07 older their aged between 54 to 59 years. Heart rate and arterial pressure will be related to the individual's contraction times. The isometric endurance response will be longer with handgrip than with one-legged knee extension, but insignificant difference will be found between above two groups. HR and BP became higher during one-legged knee extension than during handgrip. The older aged had a lower HR and a higher BP response than young, and the differences will be more apparent at a higher force level. The results reveals that increasing age is associated with an altered HR and BP response to isometric exercise however it does not affect isometric endurance.

Sallis et.al. (1999) the study will be conducted for elementary school children, spending more time in physical education did not have harmful effects on academic achievement when measured using a standardized test. The 2-year follow-up of the physical education program showed pupils in the experimental group did significantly better in achievement tests when compared to controls.

Lee et.al. (2000) examined the physiological effects of Korean traditional Qi-training; we investigated the changes in blood pressure, heart and respiratory rates before, during and after ChunDoSunBup (CDSB) Qi-training. Twelve normal healthy CDSB Qi-trainees (19-37 years old; trained for 1.3 +/- 0.2 years; 9 men and 3 women) volunteered to participate in this study. Heart rate, respiratory rate, systolic blood pressure and rate- pressure product will be

significantly decreased during Qi-training. From these results, we suggest that CDSB Qi-training has physiological effects that indicate stabilization of cardiovascular system.

McKenzie et.al. (2004)conducted the study two-year intervention study involving a physical education curriculum change showed a small increase in moderate and vigorous physical activity over control subjects, but no effects on enjoyment of PE or attendance in classes according to follow-up student surveys. However, the authors suggested that in the particular school used, the baseline levels for enjoyment of PE and attendance will be particularly high, leaving little room for improvement.

Coe.et.al. (2006)conducted the study in American middle school children, found that academic achievement will be not related to enrolment in physical education, but interestingly it will be associated with the total amount of vigorous activity performed by the children. Subsequent analysis of a 55 minute physical education class revealed that only 19 minutes of this time will be spent in moderate to vigorous activity, and it will be suggested that this will be not sufficient vigorous activity to impact on academic achievement. It could be that a threshold activity level is required to positively influence academic achievement from analyzing these longitudinal physical education interventions, it has been suggested that as a result; academic performance matches or exceeds that of controls. Children receiving additional physical education appear to show accelerated psychomotor development, which could provide a mechanism for accelerated learning of academic skills.

Ahamed et.al. (2007) Conducted study with respect to 50 minutes of additional physical activity per week (i.e. 10 minutes per school day) will be administered to children in grades 4 and 5 at intervention schools. After 16 months the results of a standard academic test did not significantly differ between intervention and control schools, despite the intervention group losing academic lesson time ($P<0.05$) Ten minutes per day of additional physical activity may not have been long enough to elicit any academic benefits, but it is sufficient to provide health advantages to the children (WHO, 2010). The study is widely applicable as a simple intervention, as it will be designed to supplement the existing Canadian curriculum, and will be conducted by generalist teachers who received additional training and resources.

Budde et.al. (2008) determined that attention and concentration are enhanced following acute bouts of either co-ordinates exercises or normal sport lessons provided in physical education

class in adolescent children. A total of 115 pupils aged 13–16 years of an elite performance school will be randomly assigned to an experimental and a control group and will be tested for attention and concentration. Both groups performed the attention and concentration test after a regular school lesson (pre-test) and then after either 10 minutes of co-coordinative exercise (experimental group), or following a normal sport lesson (control group). Concentration and attention task scores will be higher following either coordinative exercise or a normal sport lesson, in comparison to following a regular school lesson. Larger test score improvements will be observed in the co-coordinative exercise group in comparison to the normal sport lesson group, though heart rate will be similar in both groups. The authors suggested that the co-coordinative component of the exercise may explain the significant performance differences. Co-coordinative exercise may activate parts of the brain responsible for attention and concentration.

Hillman et.al. (2009) examined the impact of 20 minutes of treadmill walking at 60% maximum heart rate, followed by cognitive testing, on 20 preadolescent children. The results showed an improvement in response accuracy and academic achievement on the exercise trial relative to a resting control trial. The findings indicated that there will be no increase in arithmetic performance following exercise.

Barros et.al. (2009) conducted on amount and duration of breaks from academic study varies widely between schools in both the UK and North America. A large cross-sectional study of over 10,000 U.S children aged between 8 and 9 years old examined each pupil's rating of classroom behavior (as assigned by their teacher) and the amount of recess permitted by the school they attended. Classroom behaviour scores will be higher for children with recess in comparison to those with either no breaks or minimal breaks. However, a dose response effect will be not observed for those experiencing various recess durations. Socioeconomic status will be also associated with behaviour, with lower SES individuals having lower classroom behaviour scores. Those who received no recess will be much more likely to be from lower socio-economic backgrounds which limit the significance of the findings of the study.

Walk (2009) conducted a study on 2.4 million Texas students in grades 3-12 took part in a series of Fitness gram tests during 2007-2008. One of the outcomes from the data analysis will be that, higher physical fitness achievement will be associated with better school attendance rate

remained true after controlling for potential confounding variables including socio-economic status, ethnicity and school size.

Houlihan et.al. (2009) conducted a study on School Sport Partnership (SSP) programme initiative in England will be central to the Labour Governments Physical Education, School Sport and Club Links national strategy, which set out to address participation, inclusion, and coherence between sporting opportunities. Joining this partnership meant additional funding will be provided each year so the school could increase sporting opportunities for all. The vast majority of English schools participated in the programme and the impact of the scheme will be assessed by the Lough borough partnership (2009).

Jeanes et.al. (2009) study will be conducted on school-based programme supported by the Cricket Foundation aimed to provide greater access to cricket at an all-inclusive level. An external, well qualified coach would come into the school every week to teach cricket to the children. Beyond the obvious impact on PE provision in schools, responses from a pupil survey indicated that significantly more pupils looked forward to school and enjoyed attending when 'Chance to Shine will be taking place than when it will be not (53% and 36% looking forward to school respectively).

Singh & Bhosale (2011) will be to study the effect of anaerobic exercise on blood pressure. Anaerobic Training will be planned for six week and four days a week. Study will be conducted at swami Ramanand Teerth Marathwada University Nanded. Mean scores and standard deviation will be taken and paired t-test will be applied. There will be No significant effect on systolic Blood pressure ($t=1.10$, $p<.05$) and Diastolic Blood pressure ($t=1.60$, $p<.05$). It will be found that there will be significant decrease in blood pressure.

Sinku (2012) examined the effects of physical fitness Programmes on the lung function measured through Vital Capacity of sedentary students. Twenty sedentary male students studying in different colleges of the Swami Ramanand Teerth Marathwada University Nanded, Maharashtra (India) had attended the study voluntarily the mean age of these students will be 20.3 + 2.66, height will be 172.33 + 5.99 cm. the weight will be 69.29 + 4.01 Kg.Tests at the beginning of 2009-2010 academic year in this study, vital capacity will be taken from the sedentary students. The applied training programme will be planned for twelve weeks, 5 days a week and 60 minutes in a day, as the statistical techniques. Mean scores and standard division

will be take and paired t-test will be applied. The significant effects of physical fitness training programme on vital capacity (t= 4.30, p=<.05) will be found in sedentary students. In the study it will be found there is a significant increase in the vital capacity. According to the result, that physical fitness training programme in physical education department is academic programme.It is are not only beneficial to increase the lung function and to improve physical fitness of sedentary students but also to improve the lung functions of players of various sports disciplines and general people.

Firdous (2012) studied on effects of weight training on chest muscle circumference, upper arm muscle circumference, fore arm muscle circumference, thigh muscle circumference and calf muscle circumference. In this study fifty male students of SRTMU, Nanded, will be selected as subjects and where divided experimental group and control group. The experimental group will be treated with weight training and no training will be given to CG . The duration of training programme will be forty two days. The training will be administrated on alternative days i.e. three days per week. significant effect of weight training on chest muscle circumference, upper arm muscle circumference, fore arm muscle circumference and calf muscle circumference and in case of thigh muscle circumference no significant effect will be found on experimental group when compared with control group. Therefore, the weight training programme designed for this study might not be effective on thigh muscle circumference. The significant effect on subjects of experimental group might be due to the nature of weight training programme designed in the present study for the duration of six weeks.

Singh,More and Jain (2013) conducted the study 150 Rural and 150 Urban collegiate Athletes students from P.E.S College of physical education various colleges of SRTMU, voluntary to participate in the health related physical fitness programmes. The age, height, weight, and cardiovascular fitness, of all subjects will be measured in physical education department laboratory and Field. Participants will be ruined for 12minutes, and the total distance covered is recorded. Walking will be allowed. BMI will be calculated by Quetelet equation. The result reveals a statistically significant difference of body mass (t=p<, .05) between rural and urban collegiate students. However the result reveals a statistically significant difference of

cardiovascular fitness (t=p<.05) will be found between rural and urban collegiate students. The results of present study showed that health related fitness will be better in rural students.

Chavan (2013) conducted the study with the effects of Resistance Training to improve Sports Performance related physical fitness components among PE students. All PE students are good players in Football, Track and field, basketball and Volleyball. The investigator made an effort to find out the effects of Resistance Training to improve Sports Performance related physical fitness components among PE students. Accordingly two groups of students will be targeted. The subjects will be classified into control group and experimental group. In each group there will be forty students will be taken for present study. The age of the subject will be 21 to 30 years. These tests will be utilized for control group for two times, such as pre and post and same as experimental group therefore these tests will be used totally four times. The results of study indicates that in 150 yard Dash Run test mean of pre and post test of speed among control group will be 7.38 and 7.55 and the SDs will be 0.45 and 0.58 respectively. However Experimental group have obtained the mean values 7.47 and 6.48 of pre-test and post-test respectively and standard deviations will be 0.49 and the post test will be 0.36 respectively and observed in F-ratio will be 74.65 which is required to be 3.98 at 1,77df at 0.05 level of significance. There will be significant effects of Resistance training will be found out on sports performance related physical fitness components with respect to speed among PE students. Significant effect of Resistance training to the improvement of sports performance-related physical fitness components with respect to Athletic power ability among PE. The results reveal that there will be significant effects of Resistance training will be found out on sports performance related physical fitness components with respect to Athletic power among PE students. Significant effect of Resistance training to the improvement of sports performance-related physical fitness components with respect to work power ability among PE students. There will be significant effects of Resistance training will be found out on sports performance related physical fitness components with respect to work power among PE students. It will be hypothesized that there would be significant effect of Resistance training to the improvement of sports performance-related physical fitness components with respect to Agility among PE students.

Katherine et. al. (2013) studies on Body weight shape and body image will be measured in sixteen males and eighteen females before and after two types of exercise. The results show that

body weight and shape did not effect. The findings have implications for exercise promotion where role for body image in exercise adherence.

Andrea .et, al. (2013) examined the effects of medium-impact exercise program (MIEP) on health-related quality of life (HRQoL) and cardio respiratory fitness in seventeen sedentary women. The training programme planned for 60 minutes during 12 weeks and three days in a week. HRQoL will be measured by the SF-12v2 questionnaire, after training programme therespondent that performed an MIEP effects in HRQoL. The respondent that performed exercise indicates a higher (28%). After exercise program, there will be remarkable improvements in HRQoL in most domains. Finally MIEP proved to have a positive effect on cardio respiratory fitness.

Shangharsh (2014) studied on forty sedentary students from SRTMU Nanded, to participate in the physical exercise programme. The age, height, weight, resting heart rate, respiratory rate, breath holding capacity, BMI (Body Mass Index) and Blood Pressure of all subjects will be measured in PE department laboratory and psychological tests will be also carried out by distributing questionnaires, which measured personality characteristics, emotional intelligence and sports competitive anxiety. All 40 acted as experimental group for Physical exercise. The training programme will be planned for 60 minutes for five days in a week. Exercises that use large muscles groups will be given to the students. These exercises includes walking, jogging, dancing, stair climbing, jumping rope and cross country. Heart rate will be measured by counting radial pulse for a min. significant effect of physical exercise will be found in physiological variable with respect to Breath Holding Capacity (inspiration) of Experimental group.

Chapter III

Methodology

This chapter explained the methodological details used to implement the study.

Demographic Information

The data will be collected through respondents in the form of different descriptive tests. The demographic information about, age, height, weight etc. will be obtained before seeking training.

Sampling Method:

Purposive sampling method will be used, as the researcher selected young adults with a specific purpose.

Target of population

Forty young students of veterinary college. Training will be given to both groups separately.

Research design:

This study involves a cross sectional, comparative pre and post-test of experimental research. Since only one experimental group will be taken by the investigator and there will be no control group so this study will be conducted in a quasi-square experimental design.

Selection of variables:

The following variables will be selected as follows.

A) Physiological Efficiency

1) Resting heart rate
2) Respiratory rate
3) Breath holding capacity (Inspiration)
4) Breath holding capacity (Expiration)
5) Blood Pressure

a) Resting heart rate:

Resting heart rate of each subject will be recorded before & after training. Before recording Resting heart rate the subject will be instructed to remain lying on their bed to record the heart rate, pulse rate will be recorded by the palpation at redial artery per minute. The score will be express in number of pulse rate per minute.

b) Respiratory rate:

The Respiratory rate of each subject will be recorded before & after training. Before recording Respiratory rate the subject will be instructed to remain lying on their bed in supine lying position. The tester will be then record rate of respiration in units per minute by carefully watching the movements of the subjects abdominal. Total number of respiratory movement per minute will be finally recorded.

c) Breath holding capacity (Inspiration):

The breath holding capacity after inspiration will be recorded before & after training. Before recording breath holding capacity Inspiration the students should be instructed to stand erect with leg bended, after getting signal the student will be inhale air through his nostrils. Then the nose would be locked or closed with nose clip. The total time of air holding capacity inspiration of the students will be measured in seconds.

d) Breath holding capacity (Expiration):

The breath holding capacity after expiration will be recorded before & after training. Before recording breath holding capacity expiration the students should be instructed to stand erect with leg bended, after getting signal the student will be exhale air through his nostrils. Then the nose would be locked or closed with nose clip. The total time of air holding capacity Expiration of the students will be measured in seconds.

e) Blood Pressure:

The blood pressure is the pressure of the blood within the arteries. It is produced primarily by the contraction of the muscle. Electronic Blood pressure machine will be used to measure the blood pleasure of sample.

f) Body Mass Index:

Body Mass Index will be measured by individual's body mass divided by the square of his height.

G) Physical Fitness components

Tools of the study:

Stopwatches, still tape, electronic blood pressure device, weighing machine, stadia-meter, Spiro-meter, and tools will be used for data collection.

Physical Exercise programme:

Physical Exercise programme will be design by the investigator and the reliability and validity find out by the researcher on the basis of pilot study. The **Physical Exercise programme** will be planned for 4 days a week 60 minutes in a day for 12 weeks including 10 minutes warm up period and 05 minutes cooling down. The Health-related fitness programme includes running, waking, jumping, throwing, speed ply training, slight weight training. The training will be performing in Departmental laboratory. All test measure in physical education department.

Ethical Consideration:

In this research study the researcher Follow to ethical guidelines, principles, and standards for studies conducted with human beings .The study will be include safeguards for protecting humans,

The inclusion criteria are:

1. The participant will be agreeing to participate in the study.
2. The participants must be competitive young adults in their aged range will be 18 to28 years.
3. The participants will be not rotating through other health facility at the time of study.

The exclusion criteria are:

1. The participants advised not to participate if under any physiological or psychological disorders.

2. Inability to obtain the questionnaire of the respondent.
3. Presence of chronic medical conditions such as asthma, heart disease or any other condition and
4. Participants not less than aged of 18 and more than 28 years.

Statistical technique:-

The statistical computation of data of the present study is used by using SPSS package in the computer. The result computed also crosschecked by using following statistical variables. Mean, standard deviation, t-test test. The level of significance will be set-up at 0.05 level of confidence to test the hypothesis.

References

Abhijeet.S (2013). Effects of selected exercises to achieve health related physical fitness components among sedentary students. *Ph.D thesis*.SRTMUnivarcity, Nanded.

Ades, P. A., P. D. Savage, M. E. Cress, M. Brochu, N. M. Lee, and E. T. Poehlman (Aug, 2003).Resistance training on physical performance in disabled older female cardiac patients.*Medicine & Science in Sports & Circuit training*, 35(8):1265-1270. *AIIMS, All India Institute of Medical Sciences.*

Akadémiai K. (March, 2009).Effects of sleep deprivation on cardiorespiratory functions of the runners and volleyball players during rest and exercise.ISSN 0231-*424X 1588-2683* Issue Volume 96, Number 1/ 29-36.

Ali Z. O. (2010). The effects of Pilates exercise on blood pressure and selective physical fitness components in sedentary overweight females.*Br J Sports Med* 2010;**44**:i28 doi:10.1136/bjsm.2010.078725.92.

Andrea G. A. (2013). Influence of a Medium-Impact Exercise Program on Health-Related Quality of Life and Cardiorespiratory Fitness in Females with Subclinical Hypothyroidism: *An Open-Label Pilot Study.Volume 2013, Article ID* 592801, 5 *pages http://dx.doi.org/10.1155/2013/592801*.

Andropov R.B, Ramos L, Atallah A.N. (2009). Aerobic exercise training programmes for improving physical and psychosocial health in adults with Down syndrome. *Cochrane Database Syst Rev*.(3):CD005176.

Anna C and Heather A. (2009).Effects of Exercise Interventions on Body Image.***vol. 14*** no. 6 *780-793.*

Bakke E.F, Hisdal J, Kroese A.J, JørgensenJ.J(2007). Blood pressure response to isometric exercise in patients with peripheral atherosclerotic disease. *Clinical Physiology Function Imaging*. 27(2):109.

Bakke E.F, Hisdal J., SembS.O.(2008). intraocular pressure increases in parallel with systemic blood pressure during isometric exercise.*Invest Ophthalmol Vis Sci. 50(2):760-4. Epub 2008 Oct 3.*

Bennett B. L. (1985). "Cardio-respiratory fitness and cognitive performance before and after confinement in a nuclear submarine. 56(11):1085-91.

Bhosale(2011).Examining the effects of anaerobic exercise on blood pressure among sedentary students."*Variorum Multi-Disciplinary e-Research Journal* Vol,-02, Issue-II.

Ben,E Ari, J. J. Kellermann (1978).Effect of prolonged intensive training on cardio respiratory response in patients with angina pectoris.*British Heart Journal*, 1978, 40, 1143-1148.

Elisabeth R, Kerstin F, Gunnar A (2004).Effects of physical training on physical performance in institutionalized elderly patients (70+) with multiple diagnoses Age and Ageing 2004; 33: 13–23.

FabianaR,Holly R. Middlekauff,M, Urbana P.(2003). The effects of exercise training on sympathetic neural activation in advanced heart failure 2003 *American College of Cardiology Foundation;* 42:854-860.

Firdous M (2012). effects of weight training on chest muscle circumference, upper arm muscle circumference, fore arm muscle circumference, thigh muscle circumference and calf muscle circumference on varsity students. *M. Phil thesis*.SRTMUNanded

Frank I. Katcheret, all. (1969). “Effect Of Physical Training On Body Composition And Diet Of Females”, *Research Quarterly*, 38(4), 99.

Gitt A. K. (1994).“Comparison of four different methods for respiratory determination of the anaerobic threshold in normal people, and heart- and lung patients”.*Article in German Z. Kardiol* P , 37-42.

Glenn. R. D. (1980).“Effect of Walking and Jogging on The Body Composition and Cardio-Respiratory System of Adult”, *Dissertation Abstract International*, Vol. 40(6), 38-74.

Upadhy D. K. (2011).Effect of alternate nostril breathing exercise on cardio respiratory functions.Jun;53(6):1557-64.

VladanMilić, DraganNejić, RadomirKostić (2008). the effect of plyometric training on the explosive strength of leg muscles of volleyball players on single foot and two-foot takeoff jumps) 6(2) 169 - 179.

Walker, Robert (Jun 1998), Heart savers, *Yoga Journal*, 102-107.

Wasserman K. (1994). “Determination of the anaerobic threshold by gas exchange: biochemical considerations, methodology and physiological effects.” Department of Medicine, *Harbor-UCLA Medical Centre, Torrance, Suppl* 3:1-12.

Wiles J.D, Coleman D, Dunford M. (Aug. 2005). A novel method for the performance of isometric exercise in the home.*J Sports Sci*. 23(8):795-803.

Woorons X, Mollard P.(Feb. 2008). Effects of a 4-week training with voluntary hypoventilation carried out at low pulmonary volumes *Respir. Physiol. Neurobiol.*160(2):123-30.

Signature of Research Scholar Signature of Research Guide